## Preface on the International Workshop on Privacy Engineering 2017 (IWPE'17)

This volume is published as the proceedings of the International Workshop on Privacy Engineering 2017 (IWPE'17). The workshop held its 3<sup>rd</sup> edition in San Jose, California, on the 25<sup>th</sup> of May, 2017, co-located with the 38th IEEE Symposium on Security and Privacy (S&P).

IWPE was founded in 2015 with the goal of bridging the gap between privacy research and engineering practice, to address privacy and data protection systematically throughout the process of engineering information systems. IWPE has been supported by an international and multi-disciplinary committee including computer scientists, technical experts from industry, legal scholars as well as social scientists. IWPE'17 continued shaping the privacy engineering field, and the papers in this workshop proceedings volume present different results and ongoing research on the following topics:

- Evaluation of privacy engineering practice.
- Case studies describing challenges found and lessons learned.
- Privacy engineering methodologies.
- Application of privacy engineering to the advertisement domain.

The 2017 edition of IWPE has selected 8 papers out of 26 submissions. Reviews has been done in accordance with IEEE guidelines: 4 reviews per paper, reviewers have declared conflicts of interest, and the program chairs have reviewed all comments before sending them back to authors. Some accepted papers where shepherded to ensure high quality. The full IWPE'17 program including open papers and presentations is available at <a href="http://ieee-security.org/TC/SPW2017/IWPE">http://ieee-security.org/TC/SPW2017/IWPE</a>.

We would like to thank IWPE'17 Organizing and Program Committee, the authors, speakers and attendees who contributed to the fruitful discussions held during the workshop sessions, and the IEEE Security and Privacy workshops organizers for giving us the chance to organize this event.

May 2017

Jose M. del Alamo Seda Gürses Anupam Datta

## Organization

#### Workshop Organizers

General Chair: Jose M. del Alamo (Universidad Politécnica de Madrid)

Program Co-chair: Anupam Datta (Carnegie Mellon University)

Program Co-chair: Seda Gurses (Princeton University) Program Co-chair: Deirdre K. Mulligan (UC Berkeley)

Industry Chair: Saikat Guha (Microsoft Research India)

Mentoring Chair: Jaap-Henk Hoepman (Radboud University Nijmegen)

Publicity Chair: Arunesh Sinha (University of Michigan)

### **Program Committee**

Abdelrahaman Aly (KU Leuven)

Andrea Matwyshyn (Princeton Univeristy)

Daniel Le Metayer (INRIA)

Ero Balsa (KU Leuven)

Daniel Susser (San Jose State Univeristy)

Fanny Coudert (KU Leuven)

Fateme Shirazi (KU Leuven)

Frank Dawson (Nokia USA)

Gunes Acar (KU Leuven)

Ian Goldberg (University of Waterloo)

Ian Oliver (Nokia)

Joris van Hoboken (University of Amsterdam)

Jose M. Such (King's College London)

Juan C. Yelmo (Universidad Politécnica de Madrid)

Kai Rannenberg (Goethe University Frankfurt)

Kim Wuyts (KU Leuven)

Kristian Beckers (Technische Universität München)

Lilian Edwards (University of Strathclyde)

Maritta Heisel (University of Duisburg-Essen)

Meiko Jensen (Kiel University)

Michael Birnhack (Tel Aviv University)

Michael Tschantz (UC Berkeley)

Neeraj Suri (TU Darmstadt)

Nick Doty (UC Berkeley)

Rigo Wenning (W3C)

Rob Cunningham (MIT Lincoln Laboratory)

Rob Jansen (Naval Research Laboratory)

Stefan Schiffner (ENISA)

Stuart Shapiro (MITRE)

Tara Whalen (Google)

Travis D. Breaux (Carnegie Mellon University)

Yod-Samuel Martín (Universidad Politécnica de Madrid)

Yves-Alexandre De Montjoye (Massachusetts Institute of Technology)

# Table of Contents

Privacy Impact Assessments in Practice: Outcome of a Descriptive Field Research in the Netherlands  Jeroen van Puijenbroek and Jaap-Henk Hoepman
Assessing Privacy in Social Media Aggregators
Battery Status Not Included: Assessing Privacy in Web Standards
Statistical Detection of Downloaders in Freenet2  Brian Levine, Marc Liberatore, Brian Lynn and Matthew Wright
Addressing Early Life Cycle Privacy Risk: Applying System-Theoretic Early Concept Analysis and Model Based Systems Engineering to Privacy
A Metamodel for Privacy Engineering Methods4  Yod-Samuel Martin and Jose M. del Alamo
Privacy Broker: Message Oriented Middleware to Implement Privacy Controls in Schibsted's Ecosystem of Services (Industry paper)
Engineering Privacy and Protest: a Case Study of AdNauseam57  Daniel C Howe and Helen Nissenbaum